

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-12 (canceled)

13. (new): A method for pre-detecting responses in a secondary radar, the responses to be pre-detected including a message coded by a modulated signal, the method comprising:

a step of identification, during which the presence of a signal exhibiting modulation characteristics in accordance with those of a message of a response to be pre-detected is detected;

a step of measurement during which the duration of the identified signal is measured; and

a step of comparison during which the said duration of the signal identified is compared to a minimum duration, the minimum duration being determined on the basis of an expected duration of the messages of the responses to be pre-detected.

14. (new): The method as claimed in claim 13, wherein the messages are coded by a position-modulated signal, the presence of a signal is identified when a sequence of pulses is present in which each pulse of the sequence is separated from that which precedes by at the most a duration of the order of a modulation period.

15. (new): The method as claimed in claim 14, wherein generating a slot whose duration is substantially equal to the duration separating the first from the last pulse of the sequence of pulses, to within a modulation period identifies the presence of a signal.

16. (new): The method as claimed in claim 15, wherein the said slot is generated from, the detected pulses and from a stable signal generated on the basis of the detection for a duration equal to the maximum time until the next detection of a message pulse.

17. (new): The method as claimed in claim 16, wherein the said pulses are detected by thresholding with respect to a level determined as a function of a peak level.

18. (new): The method as claimed in claim 16, wherein the duration of the said stable signal generated on the basis of a falling edge is substantially equal to the duration of a modulation period plus 20%.

19. (new): The method as claimed in claim 18, in which the said pulses are detected by thresholding with respect to a level determined as a function of a peak level.

20. (new): The method as claimed in claim 15, in which the duration of the identified signal is measured by measuring the duration of the slot.

21. (new): The method as claimed in claim 13, in which the responses to be pre-detected being mode S responses, the minimum duration of the messages is of the order of 56 microseconds for short responses or of the order of 112 microseconds for long responses.

22. (new): A method for detecting responses in a secondary radar, the responses to be detected including a preamble and a message, the preamble including protocol data, the message being coded by a modulated signal, the method comprising:

a step of pre-detection during which a method for pre-detecting responses according to claim 1, to pre-detect the responses to be detected is used;

a step of determination during which forecast position of the preamble of each pre-detected response is determined; and

a step of checking during which the presence of the determined protocol data at said forecast position of the preamble is checked.

23. (new): The method of detection as claimed in claim 22, in which the forecast position of the preamble is determined on the basis of the start or of the end of the signal identified in step (ii) of the method of pre-detection.

24. (new): The method as claimed in claim 22, in which the responses to be detected being mode S responses, a detection is generated when at least N pulses out of four are present at the forecast position of the preamble, where N is a parameter whose value lies between 1 and 4, the limit value 1 being used to detect very scrambled responses, the limit value 4 being used to detect clear responses.

25. (new): A method for detecting responses in a secondary radar, the responses to be detected comprising a message coded by a modulated signal, said method comprising:

a step of detection during which method of pre-detection as claimed in claim 13, to pre-detect the responses to be detected, is implemented and

a step of generation during which a clock signal is generated at a message-based binary tempo;

the position of the beginning of the response is precisely determined on the basis of the beginning or of the end of the message.